



OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

SOCIAL ACCEPTANCE OF BIODEGRADABLE CARRY BAGS IN DELHI: RE-DESIGNING THE ‘SAY NO TO PLASTIC BAGS’ CAMPAIGN

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Abstract: Plastics bags are permanently damaging the ecology. Yet, people continue to use them, as they are durable and inexpensive. Moreover, they are habitually using plastic bags. Government and non-governmental agencies have tried discouraging their use by imposing bans and running ‘say no to plastic bags’ campaigns for educating public about their harmful effect on the environment and promoting biodegradable carry-bags. But all that proved ineffective in curbing the menace of plastic bags. Hence, the campaign to encourage people to shun plastic bags needs to bring an attitudinal shift in the public, so that they wilfully accept biodegradable carry bags. The purpose of the study was to redesign the ‘say no to plastic bags’ campaign using social marketing strategy and promote biodegradable carry-bags in Delhi. Pushkar (Rajasthan) was the model study area for the purposes of research. The outcomes of the study proved that legal orders and bans are not effective in long run, until the stakeholders are convinced about the need for shifting to biodegradable bags from plastic bags. A lasting solution to plastic bag menace requires that the stakeholders’ behaviour and attitude towards plastic bags changes permanently and they adopt the biodegradable carry bags. 250 Respondents from Delhi and adjacent cities, were probed about the factors which motivate them to take-up biodegradable bags and the factors which prevent them from doing so. Beside the monetary reasons, there are non-monetary or psychological reasons which act as deterrents, like – unsuitability of biodegradable bags for the wet product; fear of breakage or durability issues; and the additional cost burden – are the prominent deterrents in the path of acceptance of biodegradable bags as an alternative to plastic bags. Hence, there is a need to re-design the campaign using a social marketing strategy, with an equal emphasis placed on eight Ps of marketing-mix. A campaign designed in such a way have greater chances of success in bringing a permanent behavioural change among people towards acceptance of biodegradable carry-bags.

Keywords – Marketing-Mix, Social Marketing, Attitudinal Change, Psychological Fears or Non-monetary Price, Stakeholders, Behavioral Change.

I INTRODUCTION

Our Earth has all the elements essential for life, and mother-nature has a beautiful mechanism of balance which ensured a harmony between them. But humans with their ever-evolving mind and technology has grievously affected the ecological balance. The twentieth century witnessed on a global scale, the rise of an environmentalist movement and concern about the degradation of the physical environment.

But reversing such degradation is not an easy task and is not possible until all the stakeholders are serious about this issue. The need for a shift from plastic bags to biodegradable carry-bags has been felt at least a decade ago. Biodegradable carry-bags are made up of materials such as, paper, cloth, and jute, which take less time to degrade once they are disposed of and do not permanently harm the environment. On the hand, plastic bags are harmful to the environment as they may take several thousand years to degrade; besides being dangerous for land, aerial, and marine animals who may consume them.

Also, they spoil the waterways and the landscapes. Realizing the hazards posed by plastic bags, many countries are discouraging their use or banning them altogether.

Different agencies in India, are striving to educate public about their harmful effect on the environment through programmes in media and educational institutions; advertisements and hoardings; and also through running ‘say no to plastic bags’ campaigns in different areas. They are promoting alternatives like jute, cloth and recycled paper bags. A few States in India have banned their use. But, it is not easy for people to shift from these durable and inexpensive bags to the biodegradable ones. The ineffectiveness of all these measures has highlighted the need to design a campaign using the principles of social marketing to hit the attitude and behavior of the masses.

II REVIEW OF LITERATURE

During the 1970s, Philip Kotler and Gerald Zaltman thought that the marketing principles that are used to sell goods and services could be administered to sell ideas, attitudes, and behaviors, as well [1]. The definition of the product was hence broadened to include goods, services, and ideas; and a new discipline named ‘Social Marketing’ took birth. Zeithaml and Zeithaml stated that marketing has an important role to play in fostering social change [2].

Social marketing begins with product planning just like in case of physical products. Pricing them appropriately is the next decision area; Promotion or communication of the idea is another important consideration; and Place or creation of distribution network has to be designed for adoption of a social idea. These four Ps form the marketing-mix for any product, and are applicable for marketing of social issues as well [3]. Weinreich added four additional Ps – public (i.e., support of the masses), partnership (i.e., the government or authorities, companies or manufacturers, traders, customers, the local population, or any other stakeholder must act as partners to promote a social cause), policy (i.e., the government policy to tackle a social problem), and purse-strings (i.e., the fund needed to run a campaign). This is also known as cause-related marketing as it always supports a cause [4]. The social issues may be varied, for example – promotion of contraceptives and oral rehydration therapy (ORT); awareness drives related to AIDS, drug abuse, smoking; campaigns for blood donation, organ donation, polio vaccination; campaigns to change the behavior like, ‘exercise more and eat better’, ‘wear your seat-belt’, and so on [5] [6] [7].

Burnett identified behavioral and demographic variables that distinguish donors from non-donors. They found that the donors were generally, male, married, educated, conservative, and concerned with health [8]. Mayer

observed that the market segment of the socially and ecologically conscious population is large and marketers must make serious efforts to reach such groups [9]. Mann highlighted the importance of social advertising [10]. The social marketing campaigns fail, many-a-times, because of poor decision-making related to different aspects of the programme, such as improper analysis of the market and market segmentation; inappropriate marketing-mix; and poor planning and implementation of the campaign [11].

III OBJECTIVES

The study aims to find out a way to improve the acceptability of biodegradable carry bags as an alternative to plastic bags in Delhi. The detailed objectives were as follows:

- To study a model city in India where, where plastic bags are banned, and people have switched to biodegradable carry-bags.
- To appraise the efforts made by the stakeholders in bringing a positive change towards biodegradable carry-bags.
- To explore the applicability of social marketing strategies in promoting biodegradable carry-bags in Delhi, and re-designing the ‘say no to plastic bags’ campaign to make it successful.

IV HYPOTHESES

The studies of literature lead to two hypotheses for the purposes of the empirical study:

- H₁: People from divergent demography do not differ significantly with regard to their opinions regarding the factors encouraging them to adopt biodegradable carry-bags.
- H₂: The users of biodegradable carry-bags do not differ significantly from the non-users in terms of their opinions regarding the factors preventing adoption of such carry-bags.

V RESEARCH DESIGN AND METHODOLOGY

The primary data sources were – a field study through observation and interviews at Pushkar (Rajasthan), where ‘say no to plastic bags’ was implemented; and a questionnaire-based survey of 250 respondents in Delhi and the National Capital Region. Secondary data sources included the laws and orders of the government, newspapers, magazines, and relevant websites. The data was analyzed using quantitative methods like , mean (\bar{x}), Standard Deviation (σ), t-test (t-values), and Analysis of Variance (F-ratio).

VI RESULTS OF THE STUDY

The results of the study are presented under the following two sections:

A. Case Study of Pushkar (Rajasthan)

Pushkar is a religious city of Rajasthan. It is famous for the Brahma temple and a holy lake called Brahmasarovar. The lake became polluted and was on the verge of dying-out, as the devotees used to immerse flowers (including the plastic bags) and ashes of dead relatives, in that. The Rajasthan Government banned the manufacture and use of plastic carry-bags all over the State from August 2010.

Shortly after the imposition of the ban, the traders, locals, and the customers in Pushkar exhibited a behavioral change as they stopped using plastic carry-bags. Hoardings stating ‘say no to plastic bags’ were put up all over the holy city. The municipal authorities conducted regular inspections. The lake was revived with a complete ban on plastic bags in and around the lake area and also ban on all kind of immersion. The guides and priests helped the authorities in this drive by educating the tourists about the ban. Traders started using paper bags and beautiful handmade cloth bags. Residents started carrying their own carry-bags for shopping purposes. The ban seemed fruitful and plastic bags were not seen anywhere in the entire town area for some time. However, after a few years, plastic bags re-entered Pushkar, with plastic choked drains, filth, and a desert full of plastic bags became a common sight.

On probing this issue, the traders expressed that they have to bear the cost of cloth bags in the absence of any government support of subsidy. The small shop owners succumbed to this cost pressure, and they are switching back to plastic bags. The Municipal office stated that they are conducting regular inspection, but the defaulters refuse to pay the fine directly to them, and contest it in the court. This increases the cost of the court proceeding for the Municipality. They do not get the support from the police; and the garbage collection system is inefficient in the absence of adequate number of manpower.

The residents of Pushkar, were not aware of the ban on plastic bags. The announcement system regarding the ban on plastic bags or promotion of biodegradable bags is not regular. They are averse to use paper bags or cloth bags for the wet or moist products.

This case study indicates that legal orders or bans have a short-term impact, and they needs continuous monitoring. There is an absence of will for bringing change among the stakeholders. The campaign failed to apply the social marketing-mix and principles. There is a need to bring in a permanent solution to the plastic bag menace. This suggest an attitudinal and behavioral change among all the stakeholders.

B. Analysis of Quantitative Data

The outcomes of the questionnaire based study conducted in and around Delhi was put to different statistical tests. The results are as follows:

1) Distribution of Users and Non-Users of Biodegradable Carry-bags

The respondents were asked whether they are regularly using any form of biodegradable carry-bags. Results indicate that only 78 (31.2 percent) respondents were regularly using such bags, while 172 respondents (68.8 percent) were non-users (Table 1).

Table 1 Response towards Using Biodegradable Bags

Response	Number of Respondents	%
Yes	78	31.2
No	172	68.8
Total	250	100

2) Sources of obtaining a Biodegradable Carry-bag

The respondents were asked about the source of obtaining the biodegradable carry-bag. Table 2 shows that mostly the stores selling different products gave away such bags on the purchase of a product. Next two ranks were bagged by the sources ‘gifted or received a gift wrapped in it from someone’, and ‘purchased voluntarily’, respectively; and very few respondents got it under an awareness programme. Those who have purchased the biodegradable carry-bags voluntarily were asked to state the reason for doing so.

Table 2 Sources of Obtaining a Biodegradable Carry-bag

Source	\bar{x}	σ	Rank
From a store on a purchase	0.72	0.60	I
As a free sample under an awareness programme	0.12	0.61	IV
Gifted or received a gift wrapped in it from someone	0.46	0.66	II
Purchased voluntarily	0.28	0.62	III

3) Sources of Information for Biodegradable Carry-bags

Most of the respondents expressed that they got to know about biodegradable carry-bags, only when a store gave away such a bag along with the product they have purchased. The second rank went to ‘audio-visual advertisement’, followed closely by ‘newspaper advertisement’. Government orders and bans received the last rank (Table 3).

Table 3 Information Source Used

Source	\bar{x}	σ	Rank
Personal sources	0.22	0.67	V
Newspaper advertisements	0.32	0.66	III
Audio-visual advertisements	0.34	0.64	II
Stores giving away products in biodegradable carry-bags	0.68	0.66	I
Internet	0.18	0.62	VI
Government or legal orders	0.28	0.68	IV

4) Factors Motivating Switch to Biodegradable Bags

The respondents expressed that the prominent motivating factor for switching to biodegradable bags is when they are provided free-of-cost by the store from where they are making a purchase (Table 4). A sizeable number of respondents believed that such bags give a smart image to the user. The factors, ‘concern for the environment’ and ‘motivated by educational institutions or peers or friends’ bagged the next two ranks. ‘Advertisements’ and ‘government orders and notices’ were not considered as motivating enough.

Table 4 Factors Motivating Respondents

Factor	\bar{x}	σ	Rank
Motivated by others	2.78	0.76	IV
Stores giving away free-of-cost	3.82	0.48	I
Concern for environment	3.21	0.49	III
Advertisements	2.64	0.54	V
Government orders	3.04	0.61	VI
Gives a smart image to the user	3.46	0.62	II

5) Factors Preventing Use of Biodegradable Bags

An analysis of the data reveal that psychological fears play a major role in preventing people from switching to biodegradable bags.

Table 5 Deterrents in Adoption of Biodegradable Bags

Factor	\bar{x}	σ	Rank
Burden of paying additional price for biodegradable bags	3.83	0.51	III
Non-durability of biodegradable bags; fear of breakage	3.90	0.46	II
Unsuitability for wet products	3.92	0.45	I
Habituated to plastic bags	3.75	0.49	IV
Convenience of using plastic bags	3.61	0.62	V
Lack of awareness about the harmful effects of plastic bags	3.23	0.67	VI
Lack of concern for the environment	2.78	0.66	VIII
Do not believe that alternatives are really ecofriendly	2.44	0.72	X
Biodegradable bags are unsmarts	3.06	0.63	VII
Lack of awareness of government orders and notices	2.67	0.71	IX

The fear that the biodegradable ones are unsuitable for the wet products is a prominent deterrent. The burden of paying an additional price for such bags is the second deterrent, followed by the fear of breakage, also prevent

people from using them. People are still, habituated to plastic bags and find them convenient. Other hindrances include the ‘lack of awareness’ and the ‘lack of concern for the harmful effect of plastic bags’. The respondents are not concerned about government orders and notices. Also, they do not believe that the alternatives are ecofriendly in real sense (Table 5).

6) Efforts to Make Biodegradable Carry-bags Popular

The respondents’ opined that to promote the use of biodegradable bags there is a need to educate people about the benefits of such bags, in addition to the ill-effect of plastic bags on environment. Two designing issues regarding biodegradable bags were considered very important by them, i.e., suitability for the wet products, and durability. The payment burden for such bags should be addressed to make them popular. The respondents were of the view that banning the production of plastic bags and restricting their use will not bring a solution to this menace (Table 6).

Table 6 Efforts to Make Biodegradable Bags Popular

Method	\bar{x}	σ	Rank
By strict enforcement of government/ legal orders	2.72	0.74	IX
By designing biodegradable bags for wet and moist products	3.89	0.50	II
By reducing the payment burden on customers for such bags	3.67	0.51	IV
By celebrity endorsement	2.99	0.72	VIII
By increasing the durability of biodegradable alternatives	3.51	0.62	V
By spreading awareness about harmful effect of plastic bags	3.98	0.57	I
By promoting reduction and reuse of carry-bags	2.56	0.69	X
By designing smart and trendy biodegradable carry-bags	3.28	0.66	VII
By educating people about the benefits of biodegradable carry-bags	3.83	0.56	III
By imposing a complete ban on production of plastic bags	2.47	0.70	XI
By distributing free samples of biodegradable bags	3.44	0.67	VI

7) Impact of Demographic Variables

The influence of seven socio-economic or demographic variables were tested on the factors motivating adoption of biodegradable carry-bags. The hypothesis H₁, was tested for each of these variables.

The t-values of the first two factors and the F-ratios of the five factors were computed (Table 7A and Table 7B). The variables, ‘Sex’ and ‘marital status’, were not found to play any significant role in forming opinions regarding biodegradable bags. Respondents belonging to different age-group were found to have different opinions regarding only one factor, i.e., ‘concern for the environment’. In case of age, a significant difference was found only for the factor, i.e., ‘stores giving away biodegradable carry-bags free-of-cost’. The more educated respondents were influenced by two factors, ‘government orders and notices’ and ‘concern for environment’. F-ratio was significant for only one factor, i.e., ‘stores giving away biodegradable carry-bags free-of-cost’, when compared on the basis of occupation.

Table 7A t-Values of Socio-Economic Variables on Motivating Factors

Factor	t-value	
	Sex	Marital Status
Motivated by others	0.88	1.05
Stores giving away free-of-cost	1.47	0.88
Concern for environment	1.34	1.06
Advertisements	0.75	0.55
Government orders	1.31	1.53
Gives a smart image to the user	0.56	1.41

Table 7B F-Ratios of Socio-Economic Variables on Motivating Factors

Factor	F-ratio				
	Age	Educ ation	Occup ation	Inco me	Loca tion
Motivated by others	0.18	0.50	1.44	0.43	0.10
Stores giving away free-of-cost	2.81*	0.32	6.15**	4.48*	2.31*
Concern for Environment	1.07	5.09*	0.27	3.74*	2.97*
Advertisement	0.22	1.56	1.97	0.33	0.11
Government Orders	0.24	2.70*	0.98	1.09	1.27
Gives a smart image to the user	0.13	0.74	0.73	0.99	1.15

*0.05 significance level. ** 0.01significance level.

While the higher income groups exhibited more concern for the environment; the lower income groups were more apprehensive about the free availability of such bags.

Hence, F-ratios for these two factors were significant. Similarly, the respondents residing in good localities were more worried about the environment, while the people residing in not-so-good colonies were more conscious about the price to be paid to obtain biodegradable bags.

Hence, the demographic variables exhibited weak influence on respondents’ opinions; rather it is sporadic for most of the variables. Though, income of respondents, and the corresponding locality in which they reside, were found to have some influence on their decision to go for biodegradable bags, it is not true for all the other variables. Hence, the first hypothesis (H₁), is accepted.

8) Difference in Opinions of Respondents Using and those Not Using Biodegradable Carry-bags

The opinions of users of biodegradable carry-bags may be different from that of non-users. Two statistical tests were administered to find it out – a t-test to find out the t-values; and F-test or one-way Analysis of Variance to determine the F-ratios. (Table 8).

Table 8 Difference in Opinions of Respondents Using and those Not Using Biodegradable Carry-bags

Factor	t-value	F-Ratio
Burden of paying additional price for biodegradable bags	2.53*	6.38*
Non-durability of biodegradable bags; fear of breakage	0.90	0.82
Unsuitability for wet products	0.45	0.20
Habituated to plastic bags	2.11*	4.46*
Convenience of using plastic bags	2.03*	4.13*
Little awareness about harmful effects of plastic bags	2.07*	4.27*
No concern for environment	2.22*	4.93*
Less faith in alternatives being eco-friendly	0.31	0.10
Biodegradable bags are unsmarts	1.02	1.05
Lack of awareness of legal orders	0.31	0.10

*p<0.05 significance level.

The t-values were significant at 0.05 levels for five factors – ‘burden of additional price’, ‘no concern for environment’, ‘habituated to plastic bags’, ‘little awareness about harmful effects of plastic bags’, and ‘convenience of using plastic bags’. Further, the F-ratios for these five factors were also significant. Hence, the second hypothesis (H₂), is rejected.

VII RECOMMENDATIONS FOR THE CAMPAIGN

The authorities responsible for a campaign to promote biodegradable carry-bags should put a balanced emphasis on all the aspects of the marketing-mix to bring a major behavioral change regarding this issue, rather than just coming out with legal orders banning plastic bags.

Redesign the campaign as a product: ‘Say no to plastic bags’ or ‘switch to biodegradable bags’ campaign should be presented as a concrete idea or product. The target audience should be made to feel the need and urgency to adopt biodegradable bags or shun plastic bags. While designing the biodegradable bags, factors such as durability, convenience, style, and affordability should be kept in mind.

Reduce the monetary and non-monetary price: The price of the biodegradable bags should be less. The psychological price or the non-monetary price (i.e., the fears like biodegradable bags are not durable like plastic bags; they are not suitable for the wet products; and the inconvenience of carrying them to the market) should be reduced.

Design an integrated promotion-mix: The promotional campaigns should be educative and aim for reducing the psychological fears of people. An integrated promotion-mix (by blending the different forms of promotion judiciously); and celebrity endorsement can make such a campaign successful.

Efficient distribution of biodegradable bags: The government can arrange for a free distribution of biodegradable bags or offer them at a subsidized price to the public. The product may be distributed through the employers at offices, educational institutions, RWAs (Resident Welfare Associations) or housing society offices, Non-Governmental Organizations (NGOs), and also by volunteers going door-to-door. Efforts should be made to encourage people to keep a spare carry-bag in their possession all the time.

Generate involvement of public: The involvement of public in designing and implementing such a campaign is necessary as they can give valuable suggestions and will positively accept the change.

Build partnership between stakeholders: The stakeholders (Municipal Authorities, traders, local residents and customers) should act as partners, while designing and implementing the campaign. Seminars, workshops and rallies should be organized to bring all the parties together and also to bring an attitudinal change among them.

Design a precise policy: The Central Government should draw a clear-cut policy regarding – a blanket ban on manufacture, sale, or use of plastic bags all over the country, with no relaxation.

Build a corpus of funds or purse-string: Money is required for putting advertisements, and for the public awareness programmes. Hence, the organizers need to mop-up funds in the form of donations and grants from different sources.

VIII CONCLUSION

Till date, the awareness programmes regarding the harmful effect of plastic bags and the benefits of biodegradable bags are not substantial. Though some efforts were initiated in this direction, a strong will to bring about an attitudinal change is missing among the stakeholders. They have yet not understood the need for such a change and are resisting to such a change initiated by authorities. The psychological cost or fears involved with the decision to switch to biodegradable bags from plastic bags is quite high; and the distribution of the physical goods (the biodegradable bag) or the idea of saying no to plastic bags, is not efficient. Emphasis is only placed on promotion or advertising.

The study emphasizes the need for an application of the principles and elements of social marketing to get rid of plastic bags permanently by bringing a behavioral change among people; and to improve the acceptability of biodegradable bags through a change in attitude among all the stakeholders.

ACKNOWLEDGMENT

The study was a part of a Major Research Project of University Grant Commission (UGC), India. We thank UGC for providing us the grant to pursue the study. We express our gratitude towards the administrative and library staff of Kamala Nehru College (University of Delhi), and Ratan Tata Library, University of Delhi for providing the necessary infrastructural support.

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